PCT/AU2004/001648

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I, LEANNE MYNOTT, MANAGER EXAMINATION SUPPORT AND SALES hereby certify that annexed is a true copy of the Provisional specification in connection with Application No. 2004905002 for a patent by FLIPPER AUTOMATION PTY LTD as filed on 01 September 2004.

WITNESS my hand this
Fourteenth day of December 2004

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AUSTRALIA

Patents Act 1990

Flipper Automation Pty Ltd

PROVISIONAL SPECIFICATION

Invention Title:

Projector Flip

The invention is described in the following statement:

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Apparatus for Concealing a Product

Field of the Invention

This invention relates to apparatus for concealing a product, such as a data/video projection unit, when not in use.

Background of the Invention

In many installations of products such as data/video projectors there is an issue of protection against theft or damage to the projection unit. It is often unfeasible to remove these units from their locations when not in use. In the past the solution to this problem has been the use of some type of motorized projection lift which retracts the projection unit into the ceiling followed by a panel which seals off the hole in the ceiling. Some problems associated with these units are that often when the projection unit is in use the opening in the ceiling is not sealed off, giving unsightly views and loss to the effectiveness of heating or cooling systems. These types of projector lifts are also quite cumbersome requiring a large ceiling cavity and a difficult installation process. Another benefit of this type of discrete installation is the aesthetics, in many applications it is not desirable to view the projection unit when not in use.

The present invention seeks to overcome or substantially ameliorate the abovementioned disadvantages.

Summary of the Invention

According to a first aspect of the invention there is provided apparatus for housing a product comprising:

a frame mounted on or in a surface; and

a member rotatable within the frame and for securing the product;

wherein the member is rotatable between a first position in which the product is concealed from view and a second position in which the product is in view and accessible by a user.

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The member is preferably attached to the frame via pivot means, such as pins or axles, that allows the member to move between the first position and the second position. In the first position the member is preferably arranged to substantially cover an opening in the surface that enables the rotation of the member, so that when the product is not in use the member is flush with the surrounding surface. The member is preferably a panel.

Preferably the apparatus retracts the product, such as a projection unit, into a surface, such as a ceiling by means of the revolving panel that fits within the frame and rotates 360° within this frame, pivoted in the center of either two parallel sides.

In one form of the invention the frame may be shaped square and made of box section metal, at the center of two parallel sides may be a brass bush housing appropriate sized axels which are used to pivot two right angle lengths of metal pivoted at their centers. These right angle lengths of metal would be of length that they could rotate 360° within the frame and would have appropriate holes so that a panel of appropriate size could be attached to the underside of them allowing the panel also to rotate 360° within the frame.

In another form of the invention one of the axles could be extended outside the frame in such a way that a motor may be attached to the axel allowing the internal panel to be rotated by means of some form of motor.

The panel in this unit may be made of craft wood or any other appropriate material that can be attached to the pivot points and allows for the ability to attach a projection unit to it. The frame may be fabricated from metal or be constructed from molded plastic.

According to a second aspect of the invention there is provided a method of using apparatus housing a product, the apparatus having a frame mounted on or in a surface and a member rotatable within the frame, the method comprising the step of:

rotating the member between a first position at which the product is concealed from view and a second position at which the product is in view and accessible by a user.

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Brief Description of the Drawings

To assist with understanding of this invention, a preferred embodiment of the invention will now be described, by way of example only, with reference to the accompanying diagrams in which:

Figure 1 Illustrates one example of the apparatus as described by this invention.

Figure 2 Parts A. B. & C. Illustrate the action of the apparatus.

Detailed Description of Preferred Embodiment

As illustrated in figure 1 the projector flip is completed by the connection of the two main components, the frame 1 and the panel 2. The frame 1 consists of four pieces of metal joined together by method of welding or similar, each of the parallel sides are the same length. At the center of two of the parallel sides 3 is a bush 4 which in this instance is brass but may be made of nylon or any other low wearing material. At each end of one of the bush holding sides 3 is a notch 5 for the purpose allowing free travel of connection wiring for the projection unit.

The panel 2 consists of a board 6 in this instance craft wood but may be made any other material that may be painted and is suitable for attaching a projection unit too. The board 6 is of appropriate size that it rotates freely within the frame 1 and is attached at two opposite sides to pivot bars 7. The pivot bars 7 are of a length shorter than the sides of the panel 2 that they are attached to and are located along the center of those sides. At the center of these pivot bars 7 is an axel 8 which is of such size that it fits firmly but rotates freely within the bushes 4.

The action of the projector flip in an actual application is illustrated in figure 2.This application is a series of profiles of the projector flip positioned into an opening cut into a plaster ceiling. Illustrated in this figure are in addition the plaster ceiling 1 and the projection unit 2.

Figure 2.A illustrates a profile of the projector flip with a projection unit attached to it when in the closed position.

Figure 2.B illustrates the same application with the projector flip traveling through its motion.

Figure 2.C illustrates the projection flip in the open position in the same application.

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The projection flip as described in this invention may be either manually rotated or rotated by means of an additional motor. The motor may have an electronic circuit including an infrared receiver, to receive infrared signals from a remote control unit so as to initiate and stop rotation of the unit. The applications of this projector flip are not limited to only discrete ceiling mounting of projection units but may also apply to applications where a projection unit is to be discretely mounted in a wall, a floor, a piece of furniture or any other suitable location. Similarly the use of this invention is not entirely limited to the discrete installation of projection units but may also apply to discrete installation or mounting of many other products such as monitors, keyboards, telephones or similar.

Dated this first day of September 2004

Flipper Automation Pty Ltd
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DIAGRAMS

FIG 1

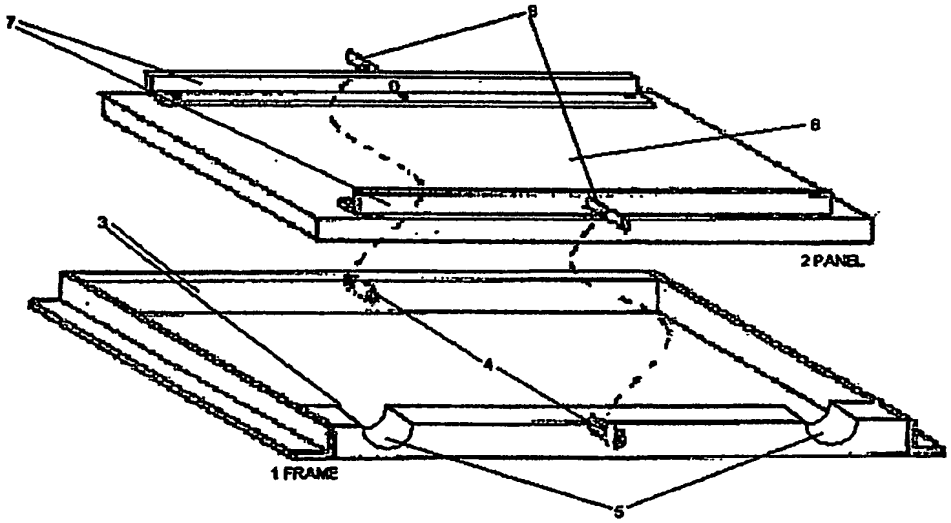

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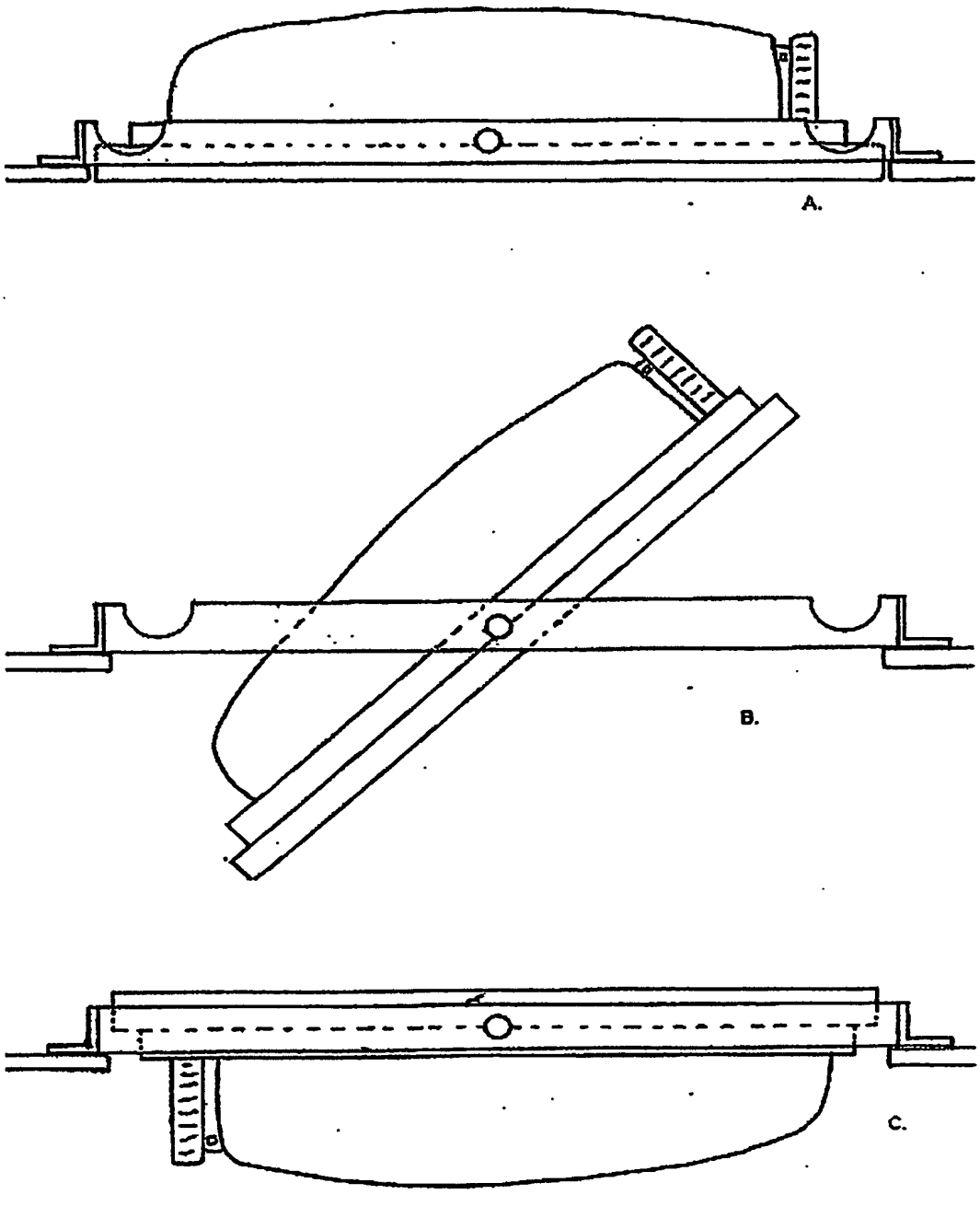
FIG 2



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Document made available under the Patent Cooperation Treaty (PCT)

International application number: PCT/AU04/001648

International filing date: 25 November 2004 (25.11.2004)

Document type: Certified copy of priority document

Document details: Country/Office: AU
Number: 2004905002
Filing date: 01 September 2004 (01.09.2004)

Date of receipt at the International Bureau: 22 December 2004 (22.12.2004)

Remark: Priority document submitted or transmitted to the International Bureau in compliance with Rule 17.1(a) or (b)

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Organisation Mondiale de la Propriété Intellectuelle (OMPI) - Genève, Suisse